

WHAT IS CLAIMED IS:

1 1. A method for identifying an agent for treating a diabetic or pre-diabetic
2 individual, the method comprising the steps of:

3 (i) contacting an agent to a mixture comprising a polypeptide encoded by
4 a nucleic acid that hybridizes under stringent conditions to a nucleic acid encoding SEQ ID
5 NO:2, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:14, SEQ ID NO:18, SEQ ID NO:24, SEQ
6 ID NO:26, SEQ ID NO:30, SEQ ID NO:34, SEQ ID NO:38, SEQ ID NO:44, SEQ ID NO:50,
7 SEQ ID NO:54, SEQ ID NO:60, SEQ ID NO:62, SEQ ID NO:68, SEQ ID NO:74, SEQ ID
8 NO:80, SEQ ID NO:86, SEQ ID NO:92, SEQ ID NO:98, SEQ ID NO:104, or SEQ ID
9 NO:110; and

10 (ii) selecting an agent that modulates the expression or activity of the
11 polypeptide or that binds to the polypeptide, thereby identifying an agent for treating a
12 diabetic or pre-diabetic individual.

1 2. The method of claim 1, the method further comprising selecting an
2 agent that modulates insulin sensitivity.

1 3. The method of claim 1, wherein step (ii) comprises selecting an agent
2 that modulates expression of the polypeptide.

1 4. The method of claim 1, wherein step (ii) comprises selecting an agent
2 that modulates the activity of the polypeptide.

1 5. The method of claim 1, wherein step (ii) comprises selecting an agent
2 that specifically binds to the polypeptide.

1 6. The method of claim 1, wherein the polypeptide is expressed in a cell
2 and the cell is contacted with the agent.

1 7. The method of claim 1, wherein the polypeptide is SEQ ID NO:2, SEQ
2 ID NO:8, SEQ ID NO:10, SEQ ID NO:14, SEQ ID NO:18, SEQ ID NO:24, SEQ ID NO:26,
3 SEQ ID NO:30, SEQ ID NO:34, SEQ ID NO:38, SEQ ID NO:44, SEQ ID NO:50, SEQ ID
4 NO:54, SEQ ID NO:60, SEQ ID NO:62, SEQ ID NO:68, SEQ ID NO:74, SEQ ID NO:80,
5 SEQ ID NO:86, SEQ ID NO:92, SEQ ID NO:98, SEQ ID NO:104, or SEQ ID NO:110.

1 8. A method of treating a diabetic or pre-diabetic animal, the method
2 comprising administering to the animal a therapeutically effective amount of an agent
3 identified by the method of claim 1.

1 9. The method of claim 8, wherein the agent is an antibody.

1 10. The method of claim 9, wherein the antibody is a monoclonal
2 antibody.

1 11. The method of claim 8, wherein the animal is a human.

1 12. A method of introducing an expression cassette into a cell, the method
2 comprising,

3 introducing into the cell an expression cassette comprising a promoter
4 operably linked to a polynucleotide encoding a polypeptide, wherein the polynucleotide
5 hybridizes under stringent conditions to a nucleic acid encoding SEQ ID NO:2, SEQ ID
6 NO:8, SEQ ID NO:10, SEQ ID NO:14, SEQ ID NO:18, SEQ ID NO:24, SEQ ID NO:26,
7 SEQ ID NO:30, SEQ ID NO:34, SEQ ID NO:38, SEQ ID NO:44, SEQ ID NO:50, SEQ ID
8 NO:54, SEQ ID NO:60, SEQ ID NO:62, SEQ ID NO:68, SEQ ID NO:74, SEQ ID NO:80,
9 SEQ ID NO:86, SEQ ID NO:92, SEQ ID NO:98, SEQ ID NO:104, or SEQ ID NO:110.

1 13. The method of claim 12, wherein the polypeptide comprises SEQ ID
2 NO:2, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:14, SEQ ID NO:18, SEQ ID NO:24, SEQ
3 ID NO:26, SEQ ID NO:30, SEQ ID NO:34, SEQ ID NO:38, SEQ ID NO:44, SEQ ID NO:50,
4 SEQ ID NO:54, SEQ ID NO:60, SEQ ID NO:62, SEQ ID NO:68, SEQ ID NO:74, SEQ ID
5 NO:80, SEQ ID NO:86, SEQ ID NO:92, SEQ ID NO:98, SEQ ID NO:104, or SEQ ID
6 NO:110.

1 14. The method of claim 12, wherein the cell is selected from the group
2 consisting of an adipocyte and a skeletal muscle cell.

1 15. The method of claim 12, the method further comprising introducing
2 the cell into a human.

1 16. The method of claim 15, wherein the human is diabetic.

1 17. The method of claim 15, wherein the human is prediabetic.

1 18. The method of claim 15, wherein the cell is from the human.

1 19. A method of diagnosing an individual who has Type 2 diabetes or is
2 prediabetic, the method comprising,

3 detecting in a sample from the individual the level of a polypeptide or the level
4 of a polynucleotide encoding the polypeptide, wherein the polynucleotide hybridizes under
5 stringent conditions to a nucleic acid encoding an amino acid sequence selected from the
6 group consisting of SEQ ID NO:2, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:14, SEQ ID
7 NO:18, SEQ ID NO:24, SEQ ID NO:26, SEQ ID NO:30, SEQ ID NO:34, SEQ ID NO:38,
8 SEQ ID NO:44, SEQ ID NO:50, SEQ ID NO:54, SEQ ID NO:60, SEQ ID NO:62, SEQ ID
9 NO:68, SEQ ID NO:74, SEQ ID NO:80, SEQ ID NO:86, SEQ ID NO:92, SEQ ID NO:98,
10 SEQ ID NO:104, or SEQ ID NO:110;

11 wherein a modulated level of the polypeptide or polynucleotide in the sample
12 compared to a level of the polypeptide or polynucleotide in either a lean individual or a
13 previous sample from the individual indicates that the individual is diabetic or prediabetic.

1 20. The method of claim 19, wherein the detecting step comprises
2 contacting the sample with an antibody that specifically binds to the polypeptide.

1 21. The method of claim 19, wherein the amino acid sequence comprises
2 SEQ ID NO:2, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:14, SEQ ID NO:18, SEQ ID
3 NO:24, SEQ ID NO:26, SEQ ID NO:30, SEQ ID NO:34, SEQ ID NO:38, SEQ ID NO:44,
4 SEQ ID NO:50, SEQ ID NO:54, SEQ ID NO:60, SEQ ID NO:62, SEQ ID NO:68, SEQ ID
5 NO:74, SEQ ID NO:80, SEQ ID NO:86, SEQ ID NO:92, SEQ ID NO:98, SEQ ID NO:104,
6 or SEQ ID NO:110.

1 22. The method of claim 19, wherein the detecting step comprises
2 quantifying mRNA encoding the polypeptide.

1 23. The method of claim 22, wherein the mRNA is reverse transcribed and
2 amplified in a polymerase chain reaction.

1 24. The method of claim 19, wherein the sample is a blood, urine or tissue
2 sample.